IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant:	CHHEDA et al.	Patent Application	
Application No.:	10/764,181	Group Art Unit:	3746
Filed:	January 23, 2004	Examiner:	Vidayathil, Tresa V.

For: REDUNDANT FAN SYSTEM IN A TURBO COOLER ASSEMBLY

APPEAL BRIEF

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I. Real Party in Interest

The assignee of the present invention is Hewlett-Packard Development Company, L.P.

II. Related Appeals and Interferences

There are no related Appeals or Interferences.

III. Status of Claims

Claims 1-22 are pending. Claims 1-22 are rejected. This Appeal involves Claims 1-22.

IV. Status of Amendments

All proposed amendments have been entered. An amendment subsequent to the Final Action has not been filed.

V. Summary of Claimed Subject Matter-

Independent Claims 1, 11 and 18 of the present application pertain to embodiments associated with fan systems.

As recited in Claim 1, a "fan cooling system with high availability" is described. This embodiment is depicted at least in Figures 1 and 2. Redundant fan system 100 of Figure 1 includes fans 101 and 102 (page 4, lines 14-17). Fan motors 201 and 202 of Figure 2 drive fans 101 and 102 of Figure 1, respectively (page 5, lines 4-22). "[F]ans 101 and 102 may be coupled with fan motors 201 and 202 respectively" (page 10, lines 10-11). "The fans are configured so that the outside air 130, 131 is impelled within the fan along respective paths 132, 133 by a duct system 110 which conveys the air flow 134 to the heat sink 120 mounted on the microprocessor" (page 4, lines 17-19). Moreover, "[i]n embodiments of the present invention, fan motors 201 and 202 are controlled by varying the voltage made available to them by the power control subsystem 203" (page 6, lines 5-7).

As recited in Claim 11, a "redundant fan cooling system" is described. This embodiment is depicted at least in Figures 1 and 2. Redundant fan system 100 of Figure 1 includes fans 101 and 102 (page 4, lines 14-17). Fan motors 201 and 202 of Figure 2 drive fans 101 and 102 of Figure 1, respectively (page 5, lines 4-22). "In embodiments of the present invention, the fan motors driving fans 101 and 102 are removably coupleable from turbo cooling system 100" (page 5, lines 11-12). "The fans are configured so that the outside air 130, 131 is impelled within the fan along respective paths 132, 133 by a duct system 110 which conveys the air flow 134 to the heat sink 120 mounted on the microprocessor" (page 4, lines 17-19). Moreover, "[i]n embodiments of the present invention, fan motors 201 and 202 are controlled by varying the voltage made available to them by the power control subsystem 203" (page 6, lines 5-7). "In embodiments of the present invention, controller 204 generates commands to comparator 206 to compare the performance metrics from tachometers 211 and 212 and/or current-measuring device 205 for each motor with pre-determined performance parameters" (page 8, line 34, through page 9, line 3). "In embodiments of the present invention, controller 204 instructs power control subsystem 203 to increase the voltage to the remaining operative motor (e.g., fan motor 202), thereby increasing the fan speed to compensate for the loss due to the failure and de-activation of fan motor 201. In another embodiment, the increase in voltage to fan motor 202 is initiated automatically in response to shutting down the power to fan motor 201" (page 9, lines 27-32).

As recited in Claim 18, a "method for providing redundant availability in a fan system" is described. This embodiment is depicted at least in Figures 1, 2 and 5. "In step 510 of Figure 5, a plurality of fan motors are coupled with respective fans. As discussed

above with reference to Figures 1-3, fans 101 and 102 may be coupled with fan motors 201 and 202 respectively" (page 10, lines 8-11). Redundant fan system 100 of Figure 1 includes fans 101 and 102 (page 4, lines 14-17). Fan motors 201 and 202 of Figure 2 drive fans 101 and 102 of Figure 1, respectively (page 5, lines 4-22). "In step 520 of Figure 5, a duct is configured to guide air flow from the plurality of fans to a heat sink" (page 10, lines 14-15). "The fans are configured so that the outside air 130, 131 is impelled within the fan along respective paths 132, 133 by a duct system 110 which conveys the air flow 134 to the heat sink 120 mounted on the microprocessor" (page 4, lines 17-19). "In step 530 of Figure 5, the performance of each of the fan motors is compared with a pre-determined parameter" (page 10, lines 19-20). "In step 540 of Figure 5, a fan motor speed is selected for one of the remaining fan motors based upon the comparing of step 530" (page 10, lines 27-28).

VI. Grounds of Rejection to Be Reviewed on Appeal

1. The Abstract of the Disclosure is objected.

2. Claims 1-9, 11-16 and 18-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent 6,791,836 by Cipolla et al., hereinafter referred to as "Cipolla", in view of United States Patent 5,414,591 by Kimura et al., hereinafter referred to as "Kimura".

3. Claims 10 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cipolla, in view of Kimura, further in view of United States Patent Application Publication 2003/0112600 by Olarig, et al., hereinafter referred to as "Olarig".

VII. Argument

1. Whether the objection to the Abstract of the Disclosure is proper?

The Abstract of the Disclosure is objected. In particular, as recited in the Office Action mailed June 14, 2007, "the abstract of the disclosure is objected to because the abstract should be a summary of the entire invention, including aspects of the invention that make it new in the art" (Office Action mailed June 14, 2007; page 2, section 1). Appellants respectfully submit that the Abstract as filed is in accordance with the requirements of 37 CFR § 1.72(b).

37 CFR § 1.72 (b) recites:

> A brief abstract of the technical disclosure in the specification must commence on a separate sheet, preferably following the claims, under the heading "Abstract" or "Abstract of the Disclosure." The sheet or sheets presenting the abstract may not include other parts of the application or other material. The abstract in an application filed under 35 U.S.C. 111 may not exceed 150 words in length. The purpose of the abstract is to enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure. (emphasis added).

Appellants respectfully submit that the Abstract as filed "enable[s] the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure," as required under 37 CFR § 1.72(b). Moreover, Appellants note that the Abstract is limited to 150 words under 37 CFR § 1.72(b). In preparing the Abstract, Appellants considered both 37 CFR § 1.72(b) and MPEP 608.01(b) in attempting to best summarize the claimed embodiments in consideration of the 150 word limit. Appellants respectfully submit that the Abstract as filed is in accordance with 37 CFR § 1.72(b). Therefore, Appellants respectfully submit that the Abstract as filed overcomes the instance objection.

2. Whether Claims 1-9, 11-16 and 18-22 are Unpatentable Under 35 U.S.C. § 103(a) by Cipolla in view of Kimura.

Claims 1-9, 11-16 and 18-22 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cipolla in view of Kimura. Appellants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 1-9, 11-16 and 18-22 are patentable over the combination of Cipolla in view of Kimura in view of the following rationale.

Appellants respectfully assert that the combination of Cipolla and Kimura does not teach, describe or suggest the invention as claimed because the combination of the Cipolla and Kimura does not satisfy the requirements of a *prima facie* case of obviousness.

In order to establish a *prima facie* case of obviousness, "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings" (MPEP 2142). Moreover, "[i]t is improper to combine references where the references teach away from their combination" (emphasis added; MPEP 2145(X)(D)(2); *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). In particular, "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006)" (MPEP 2143.01). Appellants respectfully note that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention" (emphasis in original; MPEP 2141.02(VI); *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)).

Furthermore, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious" (emphasis added; MPEP 2143.01(VI); *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)). Moreover, "[i]f the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed amendment" (emphasis added; MPEP 2143.01(V); *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

Appellants understand Cipolla to disclose a fan module including two or more individual fans and a processor for controlling the two or more individual fans (Abstract). With reference to Figure 4 of Cipolla, "[p]referably, the processor 116 controls the speed of each fan 102 when the temperature detected falls below a predetermined temperature set point. However, the processor 116 can also control the fans 102 based upon a predetermined relationship between the fan speed and temperature" (col. 5, lines 1-5). Appellants understand Cipolla to teach that processor 116 can control the speed of each fan independently, based on a current state of the operating environment in which a particular fan 102 is located. In particular, Appellants respectfully submit that intended purpose of Cipolla is to provide a fan module in which the individual fans can be controlled based on the

operating environment. In other words, Appellants submit that the principle of operation of Cipolla is to provide active control of the fans, and thus the operating environment in which the fans are operational.

In contrast, Appellants understand Kimura to disclose "[a] magnetic disk storage system in which magnetic disk drives can be cooled effectively, and even if a blast device for one of [the] magnetic disk drives fall into trouble or cease operation, a temperature rise of this magnetic disk drive can be suppressed to the minimum. For this purpose, in the magnetic disk storage system containing a plurality of magnetic disk drives, [blast] devices [are] provided for each of the disk drives, and the disk drives are separated by partitions in which openings are formed so that the cooling air can be passed between adjacent magnetic disk drives" (Abstract). Specifically, Appellants understand Kimura to teach that in the event of the failure of a blast device, e.g. a fan, the corresponding magnetic disk drive can still receive some cooling air through an opening in a partition to separating an adjacent disk drive.

In particular, Appellants respectfully submit that the magnetic disk storage system of Kimura includes blast devices that are not independently controllable. Kimura specifically discloses a system in which failure of a blast device is compensated for, to some extent, by providing openings in partitions separating adjacent magnetic disk drives. Moreover, the system of Kimura does not require detection of the failure by a processing device. Rather, the supplemental cooling is provided based on the pressure of the airflow, in that the pressure is lower on the side of the partition associated with the failed blast device, allowing air to pass through the opening from an adjacent fan (see col. 5, lines 35-61). Indeed, Appellants respectfully submit that intended purpose of Kimura is to provide the supplemental cooling passively. In other words, Appellants submit that the principle of operation of Kimura is to provide passive supplemental cooling in the event of a blast device failure.

Appellants note that while an embodiment of Kimura does provide a detector for detecting the operational condition of a fan, this detection is only used for informing a user of a failed fan for replacement. In particular, as shown in Figure 26, signal line 22 only provides signal transmission in one direction, from detector 21 to control circuit 23 for providing some type of output signal (col. 14, lines 45-62).

Appellants respectfully submit that modifying Cipolla in the manner suggested in the Office Action mailed June 14, 2007, would render Cipolla inoperable for its intended purpose. For instance, Cipolla discloses a fan module for actively controlling individual fans based on operating conditions. In contrast, Kimura discloses a system in which fan failures are passively accounted for by providing openings in partitions separating adjacent magnetic

disk drives. As recited above, "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention" (MPEP 2141.02(VI)). Appellants respectfully submit that by modifying Cipolla in the manner suggested in the Office Action mailed June 14, 2007,, the active control of the fans would be eliminated, thus rendering Cipolla inoperable for its intended purpose.

Moreover, Appellants respectfully submit that Kimura teaches away from combination with Cipolla as suggested in the Office Action mailed June 14, 2007,. For instance, Appellants respectfully submit that one of ordinary skill in the art would not be motivated to combine the teachings of Kimura directed towards passive supplemental cooling with the active fan control of Cipolla, as the passive functionality of Kimura teaches away from the active control of Cipolla.

Appellants note the assertion in the Response to Arguments of the Office Action mailed June 14, 2007, that "the features of Kimura used in combination with Cipolla can be used in both inventions for the same purpose (See motivation presented on p. 5 of the Office action sent on December 8, 2006" (page 5, section 10). As recited above, Appellants respectfully note that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention" (emphasis in original; MPEP 2141.02(VI)). As described above, Appellants respectfully submit that Kimura teaches away from combination with Cipolla as suggested by the Office Action mailed June 8, 2007. Therefore, Appellants continue to assert that one of ordinary skill in the art would not be motivated to combine the teachings of Kimura directed towards passive supplemental cooling with the active fan control of Cipolla, as the passive functionality of Kimura teaches away from the active control of Cipolla.

Furthermore, Appellants note the assertion in the Office Action mailed June 14, 2007, that "making elements of an apparatus separable fails to patentably distinguish this invention over the prior art. (See MPEP § 2144.04(V)(C))" and "that it would have been obvious to one of ordinary skill in the art at the time of the invention to make the motor removable from the fan cooling system" (see Office Action mailed June 14, 2007, page 3, lines 13-18). Appellants respectfully submit that the cited passage, directed toward a lipstick holder with a removable cap, is not sufficiently similar to those in the instant application. Therefore, Appellants respectfully submit it would not have been "obvious to one of ordinary skill in the art at the time of the invention to make the motor removable from the fan cooling system", as asserted in the Office Action mailed June 14, 2007.

Appellants note the assertion in the Response to Arguments of the Office Action mailed June 14, 2007, that "it is obvious to make the motor separable from the fan assembly because it is desirable to obtain access to the fan in order to exchange a functioning motor for an inoperable one" (page 5, section 10). Appellants respectfully note that MPEP 2144.04(V)(C) recites:

> *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961) (The claimed structure, a lipstick holder with a removable cap, was fully met by the prior art except that in the prior art the cap is "press fitted" and therefore not manually removable. The court held that "if it were considered desirable for any reason to obtain access to the end of [the prior art's] holder to which the cap is applied, it would be obvious to make the cap removable for that purpose."). (emphasis added).

Therefore, Appellants respectfully submit that in order for it to be obvious to make the motor separable from the fan assembly, as asserted, it must be desirable to obtain access to the fan of the prior art. Appellants respectfully submit that neither Cipolla nor Kimura teach the desirability of obtaining "access to the fan in order to exchange a functioning motor for an inoperable one" (emphasis added; Office Action mailed June 14, 2007; page 5, section 10).

For instance, with reference Figure 1 of Cipolla, a fan module 100 includes two or more individual fans 102. Each fan 102 includes an integrated motor 103 and fan blade 104. In particular, the entire fan module 100 is removable. Appellants respectfully submit that there is no desirability to obtain access to fan motor separately from the fan blade of Cipolla, since each fan includes both. Moreover, Appellants submit that the motor and fan blade of Cipolla are not separable, and that any separation is taught away from due to the use of an integrated fan module.

Furthermore, with reference to at least Figures 1-5, 7-12, 14, 21-23, 26-29 and 31 of Kimura, Appellants respectfully submit that Kimura discloses that blower fans 13 are integrated fans including both fan blades and motors. Appellants respectfully submit that there is no desirability to obtain access to the individual components of blower fans 13. Moreover, Appellants submit that the components, e.g., motor and fan blade, of Kimura are not separable, and that any separation is taught away from due to the use of an integrated blower fan.

Also, Appellants respectfully submit that the Office Action mailed June 14, 2007, errs in the reliance on the instant application in supporting the assertion that "it is obvious to make the motor separable from the fan assembly because it is desirable to obtain access to the

fan in order to exchange a functioning motor for an inoperable one" (page 5, section 10). The instant Office Action states that "[i]n the instant application, it is desirable to obtain access to the fan in order to engage a functioning motor" (page 6, lines 19-20). First, it is necessary to establish that the prior art includes the desirability for separability, as required in MPEP 2144.04(V)(C). Second, Appellants respectfully submit that reliance on the instant disclosure in supporting a rejection is improper due to the reliance on impermissible hindsight.

In summary, Appellants respectfully submit that the combination of Cipolla and Kimura does not satisfy the requirements of a *prima facie* case of obviousness, that independent Claims 1, 11 and 18 overcome the rejection under 35 U.S.C. § 103(a), and that these claims are in condition for allowance. Claims 2-9, 12-16 and 19-22 are dependent on Claim 1, 11 or 18 and recite additional embodiments. As such, Appellants also respectfully submit that Cipolla and Kimura, alone or in combination, do not show or suggest the additional claimed features of the present invention as recited in Claims 2-9, 12-16 and 19-22, and that these claims are also in condition for allowance as being dependent on an allowable base claim. Therefore, the Appellants respectfully assert that the basis for rejecting Claims 1-9, 11-16 and 18-22 under 35 U.S.C. § 103(a) is traversed.

3. Whether Claims 10 and 17 are Unpatentable Under 35 U.S.C. § 103(a) by Cipolla in view of Kimura, further in view of Olarig.

Claims 10 and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Cipolla in view of Kimura, further in view of Olarig. Appellants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 10 and 17 are patentable over the combination of Cipolla in view of Kimura, further in view of Olarig, in view of the following rationale.

Claim 10 is dependent on independent Claim 1 and Claim 17 is dependent on independent Claim 11. Hence, by demonstrating that Claims 1 and 11 are not shown or suggested by Cipolla, Kimura and Olarig (alone or in combination), it is also demonstrated that Claims 10 and 17, respectively, are not shown or suggested by Cipolla, Kimura and Olarig (alone or in combination).

As presented above in the discussion of the rejection Claims 1-9, 11-16 and 18-22, Appellants respectfully submit that Cipolla and Kimura, alone or in combination, do not show or suggest the limitations of amended independent Claims 1 or 11. The arguments are not repeated for purposes of brevity. Appellants further submit that Olarig does not overcome the shortcomings of Cipolla and Kimura.

Appellants understand Olarig to disclose a chassis with adaptive fan control. In particular, Appellants respectfully submit that Olarig does not provide the suggestion or motivation to combine the teachings of Cipolla and Kimura. Appellants continue to assert that one of ordinary skill in the art would not be motivated to combine the teachings of Kimura directed towards passive supplemental cooling with the active fan control of Cipolla, as the passive functionality of Kimura teaches away from the active control of Cipolla, even in consideration of Olarig.

In summary, Appellants respectfully submit that the combination of Cipolla, Kimura and Olarig does not satisfy the requirements of a *prima facie* case of obviousness, that independent Claims 1 and 11 overcome the rejection under 35 U.S.C. § 103(a), and that these claims are in condition for allowance. Claims 10 and 17 are dependent on Claims 1 and 11, respectively, and recite additional embodiments. As such, Appellants also respectfully submit that Cipolla and Kimura, alone or in combination, do not show or suggest the additional claimed features of the present invention as recited in Claims 10 and 17, and that these claims are also in condition for allowance as being dependent on an allowable base claim. Therefore, the Appellants respectfully assert that the basis for rejecting Claims 10 and 17 under 35 U.S.C. § 103(a) is traversed.

Conclusion

Appellants respectfully submit that pending Claims 1-9, 11-16 and 18-22 are patentable over the combination of Cipolla and Kimura. Appellants respectfully submit that pending Claims 10 and 17 are patentable over the combination of Cipolla, Kimura and Olarig.

Therefore, Appellants respectfully submit that the rejections of the Claims are improper as the rejection of Claims 1-22 do not satisfy the requirements of a *prima facie* case of obviousness. Accordingly, Appellants respectfully submit that the rejection of Claims 1-22 under 35 U.S.C. §103(a) is improper and should be reversed. The Appellants wish to encourage the Examiner or a member of the Board of Patent Appeals to telephone the Appellants' undersigned representative if it is felt that a telephone conference could expedite prosecution.

Respectfully submitted,
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VIII. Appendix - Clean Copy of Claims on Appeal

1. A fan cooling system with high availability comprising:

a first fan coupled with a first motor for creating a first air flow;

a second fan coupled with a second motor for creating a second air flow;

a duct system for conveying said first air flow and said second air flow to at least one heat sink; and

a control system coupled with said first fan motor and said second fan motor.

2. The fan cooling system of Claim 1 wherein said first motor and said second motor are removably coupleable with said fan cooling system.

3. The fan cooling system of Claim 1 wherein said first motor and said second motor are configured to operate at variable speeds.

4. The fan cooling system of Claim 1 wherein said control system further comprises:

a motor performance monitoring unit configured to determine a performance metric of said first motor and a performance metric of said second motor.

5. The fan cooling system of Claim 4 wherein said motor performance monitoring unit comprises:

a first tachometer configured to determine the rotational speed of said first motor; and

a second tachometer configured to determine the rotational speed of said second motor.

6. The fan cooling system of Claim 4 wherein said motor performance monitoring unit comprises:

a current monitoring device for determining the amount of current used by said first motor; and

a second current monitoring device for determining the amount of current used by said second motor.

7. The fan cooling system of Claim 4 wherein said motor performance monitoring unit comprises:

a comparator for comparing a measured performance metric of said first motor with a pre-defined parameter and for comparing a measured performance metric of said second motor with a pre-defined parameter.

8. The fan cooling system of Claim 7 wherein said motor performance monitoring unit further comprises:

a power control subsystem; and

a controller coupled with said power control subsystem and configured to generate a command to said power control subsystem in response to a signal from said comparator.

9. The fan cooling system of Claim 8 wherein said controller causes said power control subsystem to dynamically alter the operating speed of said second fan when said performance metric of said first motor exceeds said pre-defined parameter.

10. The fan cooling system of Claim 4 wherein said motor performance monitoring unit comprises:

a state machine for determining when said performance metric of said first motor exceeds a pre-defined parameter and for automatically generating a command to a power control subsystem to dynamically alter the operating speed of said second fan.

11. A redundant fan cooling system comprising:

a plurality of variable-speed fan motors removably coupleable with said redundant fan cooling system;

a plurality of fans, each of said plurality of fans coupled respectively with one of said plurality of variable-speed fan motors;

a ducting system for conveying air flow from each of said fans to a heat dissipating device; and

a controller for dynamically changing the operating speed of at least one of said plurality of variable-speed fan motors in response to a measured performance metric.

12. The redundant fan cooling system of Claim 11 wherein said controller further comprises:

a monitoring unit configured to determine a performance metric of each of said plurality of variable-speed fan motors.

13. The redundant fan cooling system of Claim 12 wherein said monitoring unit comprises:

a current monitoring device for monitoring the amount of current used by each of said plurality of fan motors.

14. The redundant fan cooling system of Claim 12 wherein said monitoring unit comprises:

a tachometer to monitor the rotational speed of each of said plurality of variable-speed fan motors.

15. The redundant fan cooling system of Claim 11 wherein said controller further comprises:

a comparator for comparing said measured performance metric with a pre-defined parameter.

16. The redundant fan cooling system of Claim 15 wherein said controller dynamically changes the operating speed of at least one of said plurality of variable-speed fan motors when said measured performance metric exceeds said pre-defined parameter.

17. The redundant fan cooling system of Claim 11 wherein said controller further comprises:

a state machine for determining said measured performance metric exceeds a pre-defined parameter and for automatically generating a command to a power control subsystem to dynamically alter the operating speed of at least one of said plurality of variable-speed fan motors.

18. A method for providing redundant availability in a fan system comprising:

coupling each of a plurality of fan motors with a respective fan;

configuring a duct to guide air flow from said plurality of fans to a heat sink;

comparing the performance of each of said plurality of fan motors with a pre-defined parameter; and

selecting a fan motor speed for one of said plurality of fan motors based upon said comparing.

19. The method as recited in Claim 19 further comprising:

receiving a measured performance metric from a monitoring device; and using a comparator to compare said measured performance metric with said pre-defined parameter.

20. The method as recited in Claim 19 wherein said monitoring device comprises:

a current monitoring device for monitoring the amount of current used by each of said plurality of fan motors.

21. The method as recited in Claim 19 wherein said monitoring device comprises:

a tachometer to monitor the rotational speed of each of said plurality of fan motors.

22. The method as recited in Claim 18 further comprising:

operating each of said plurality of fan motors at a first operating speed;

determining that the performance of a first fan motor of said plurality of fan motors exceeds said pre-defined parameter;

disengaging said first fan motor; and

changing the operating speed of a second fan motor of said plurality of fan motors to a second operating speed.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.